Selected Papers

TITLE: Cooperative and Group Business Decisions.
(Moderator: Allan Gray, Purdue University).

Comparison of Perspectives of the Farm Cooperative Operating Environment: Managers and Directors. *John Adrian, Auburn University; Stephen Kiser, FDIC Division of Insurance; T. Wade Green, Georgia Cooperative Extension Service.*

Both directors and managers showed strong support for most traditional cooperative principles and performance was consistent for finance and decision-making areas. Managers were more proficient in the manager-versus-director responsibility areas. Self-assessments of knowledge/abilities were higher for managers and consistent with performance measures. Training in financial analysis, strategic planning, and roles of managers and directors is needed.

A New Generation Peanut Cooperative in Georgia: A Benefit-Cost Analysis. *Sam Hancock, University of Georgia; Todd Ray, University of Georgia; Stanley Fletcher, University of Georgia; William Thomas, University of Georgia.*

A survey of Georgia peanut producers revealed that the southwest corner of Georgia could be targeted for a new generation peanut cooperative. The objective of this study was to examine the feasibility of this option. Results revealed that this might be an economically feasible solution to peanut producers' marketing problems.

Theoretical Model of Coalition Development in the Agricultural Marketing System. *Hubertus Puaha, Oklahoma State University; Daniel Tilley, Oklahoma State University.*

The theory of agricultural cooperative formation is enhanced by incorporating reciprocity and generosity. Farmers' expected utility and membership decision in the agricultural cooperative are affected by generosity of their partners in the coalition and reciprocal responses to the outcome they received.

Analyzing the New Sustainability Index: A Club Theory Perspective. *Kim Zeuli, University of Kentucky; Adrienne Bernardi, University of Kentucky.*

The Dow Jones Sustainability Group Index was established in 1999. Club theory is used to explore why some firms will alter current business practices in an effort to become a member of this index. The feasibility of creating an index for agribusiness and thus promoting sustainable agriculture is also discussed.

TITLE: Economic Diversification & Business Development.
(Moderator: Charlie Hall, Texas A&M University).

Measuring Success for Small Businesses in the South. *Jennie Popp, University of Arkansas; Michael Waits, University of Arkansas.*

This study discusses the importance of both financial and nonfinancial factors in measuring the success of small businesses. Using data from a survey of small businesses in Arkansas, how small businesses measure success and profiles of successful and unsuccessful business are established.

A Retail Sales/Sales Tax Paradox. *Notie Lansford, Oklahoma State University; Wade Brorsen, Oklahoma State University.*

Small communities have a vital interest in knowing the relationships between retail trade, sales tax collections, and the elasticity of demand with respect to the sales tax rate. A cross-sectional, time series model is proposed that examines the effects of changing sales tax rates over time. The Oklahoma case contains 15 years of data for approximately 68 counties. We hypothesize a case where increasing the sales tax rate results in a decline in local retail trade. The results may provide vital information for rural communities who are examining alternative avenues to enhance both local trade and infrastructure.

Targeting Economic Diversification: An Application of Target MOTAD and Social Accounting Matrix Procedures. *Thomas Harris, University of Nevada-Reno; Shawn Stoddard, University of Nevada-Reno; Chang Seung, University of Nevada-Reno; Rangesan Narayanan, University of Nevada-Reno.*

With rapid changes in state and local economies, many state and local economic development agencies and practitioners have attempted to diversify state and local economies to minimize variability. However, minimizing variability may reduce expected economic growth, which may run contrary to desires of state and local officials. This paper applies Target MOTAD and Social Accounting Matrix procedures to formulate economic and diversification plans. Target MOTAD, unlike the portfolio variance approach, can incorporate non-normal distributions of economic growth and minimizes only negative deviations from an employment growth target. Economic diversification plans from portfolio variance and Target MOTAD procedures are compared.

Patterns of Metro and Non-Metro Manufacturing Employment Shifts and Policy Implications for Rural Development. *E. Ekanem, Tennessee State University; F. Tegegne, Tennessee State University; S. Singh, Tennessee State University; S. Muhammad, Tennessee State University.*

In recent years, there has been a movement of manufacturing jobs from urban to rural areas of Tennessee possibly due to the availability of space and labor. Published data are used in explaining observed metro and non-metro manufacturing employment shifts and discussing rural economic development policy implications of observed patterns.

TITLE: Contemporary Environmental Issues.
(Moderator: Bill Park, University of Kentucky).

Environmental Justice Revisited: The Case of Kentucky. *Ronald Fleming, University of Kentucky; Angelos Pagoulatos, University of Kentucky; Arun K. Srinivasan, University of Kentucky.*

Environmental racism is the exploitation of minority or poor persons based on environmental quality. This study evaluates the economic conditions of persons located adjacent to hazardous waste (host) sites. Kentucky citizens inhabiting host sites tend not to be economically disadvantaged minorities and superfund improvements have not statistically increased housing values.

Joint Estimation of Revealed and Stated Preference Data with an Application to Recreational Red Snapper Valuation. *Dhazn Gillig, Texas A&M University; Teofilo Ozuna, Texas A&M University; Wade L. Griffin, Texas A&M University.*

This study extends the joint estimation of revealed data (a travel cost method) and stated preference data (contingent valuation method) by accounting for truncation in the revealed preference data. We demonstrate the analytical model and estimation procedure by using them to estimate the value of recreational red snapper.

Poultry Litter Transport to Reduce Non-Point Pollution. *Ashley Renck, Mississippi State University; Diane Hite, Mississippi State University.*

One problem associated with the now vertically integrated broiler industry is the disposal of litter produced in poultry houses. Overfertilization of land in areas of concentrated production is thought to contribute to excess nutrient runoff into the surface and ground water supplies. The profitability of transporting litter for fertilizer use is evaluated.

Household Demand for Environmental Donations: Evidence from Florida. *David Carter, University of Florida; Maxwell Mudhara, University of Florida.*

Donations to environmental causes are, in part, an expression of value for environmental quality. As with any other tax-deductible charitable contribution, these donations also provide a direct benefit to the giver. This study explores the demand for environmental donations by Florida residents. Following the literature on charitable giving (e.g. Yen et al), we assume that households derive utility from donating at a price given by the donation less the tax deduction. The demand for discrete levels of environmental donations is estimated with an ordered (cumulative) logit regression. Results indicate that income, education, political affiliation, environmental attitudes, and participation in outdoor recreation, influence the odds of different contribution levels.

TITLE: Farm Level Economics.
(Moderator: Richard Gallagher, Texas A&M University).

Measuring Productivity and Factor Bias for a Sample of Kansas Farms. *Michael Langemeier, Kansas State University; Allen M. Featherstone, Kanasas State University; Mark K. Cotton, Cornell Cooperative Extension.*

This study examined productivity and factor bias for a sample of Kansas farms. Malmquist indices were used to decompose productivity into technical change, pure technical efficiency change, and scale change. Technical change was further decomposed into output

bias, input bias, and the magnitude component.

Factors Affecting Profitability in Texas Crop Farms. *George Knapek, Texas A&M University; Steven Klose, Texas A&M University; Dean A. McCorkle, Texas A&M University.*

Farm managers attempt to maximize the returns to their resources by choosing a perceived optimal mix of enterprises, allocating available resources to the enterprises, and utilizing a profit maximizing level of inputs. In balancing these delicate management decisions, generating a profit sufficient to meet the farm's goals and objectives in today's environment is increasingly challenging. The key factors affecting profitability of crop farms in Texas will be identified by analyzing a new Extension Service data base of production and financial records of farms across Texas.

Profile of Minority-Operated Farms in the South: Issues and Policy Implications. *Safdar Muhammad, Tennessee State University; Surendra P. Singh, Tennessee State University; Fisseha Tegegne, Tennessee State University; Enefiok Ekanem, Tennessee State University; Anonya A. Akuley-Akmenyenu, Tennessee State University.*

The decline is much higher for minority-operated farms than others. The objective is to examine the characteristics of minority operated farms in the South. The minority farmers have smaller farms, work off-farm, are older, and are full owners. This paper contributes useful background for researchers, policy makers, and others concerned about minority farmers.

Profit Maximizing Economic Thresholds for the Cotton Boll Weevil in the Texas High Plains. *Carlos Carpio, Texas Tech University; Octavio A. Ramirez, Texas Tech University; Scott Armstrong, Texas Tech University.*

This study expands recently proposed

methods to determine a profit maximizing economic threshold (ET) for the control of cotton boll weevil infestations in the Texas High Plains. Using the profit maximizing economic threshold determined in this study instead of the currently recommended ET could substantially increase farm-level profitability. The estimated ET models are also used to economically evaluate the recently approved boll weevil eradication programs. The paper also discusses alternative ET definitions that have been adopted in other pest management programs and the modeling techniques that could be used to determine profit maximizing ET's in those cases.

TITLE: Finance Issues in Agriculture
(Moderator: Shannon Neibergs, University of Louisville).

Income Sources and Farm Consumption Behavior. *Roger Wilson, University of Nebraska-Lincoln; Glenn H. Helmers, University of Nebraska-Lincoln.*

This study seeks to identify specific income factors affecting farm consumption. Prior research used prior year's consumption as a proxy for all relevant factors in the model. Three types of income—non-farm, gift, and expected farm (using gross assets as a proxy)—have different effects on consumption.

Access to Credit and Productive Efficiency Among Smallholder Groundnut Producers in Malawi. *Ken Spear, Virginia Polytechnic Institute and State University; Gautam Hazarika, Virginia Polytechnic Institute and State University.*

This paper tests the effects of access to credit on productive efficiency among smallholder groundnut producers in Malawi. Micro finance is increasingly touted as a solution to poverty problems in the developing world. Yet in Malawi past experience with agricultural credit has not been positive. This paper will focus on new-generation finance schemes and their impact on groundnut producers.

Modeling Loan Portfolio Risk in A Stochastic Environment. *Richard Gallagher, Texas A&M University.*

This research focused upon the portfolio risk-management strategy of developing an improved loan loss allowance process. A simulation methodology developed for producer risk modeling was integrated into the allowance process. The results indicate that loan and portfolio risk estimations can be improved in a correlated and stochastic environment.

Estimating Farm Financial Risk Using a Stress Test/Value at Risk Model. *Allen Featherstone, Kansas State University; Stephen R. Stephens, Federal Land Bank Association.*

Farm financial risk from interest rate changes are explored by modeling changes in the market value of equity of a farmer. Representative balance sheets were used for modeling purposes with various different leverage ratios and debt instruments. Results indicate that risk increased the longer the period of time that an interest shock remains. Risk increased to the firm, as leverage increased. The inoculation power of longer term loans is greater as the amortization term of the loan is increased. This is caused because of the infinite duration of real estate, and because financial instruments to match that duration are unavailable.

TITLE: Crop Marketing Issues.
(Moderator: Ken Stokes, Texas A&M University).

Testing Economic Theory of Hedging Using Evidence From the Cotton Industry. *Olga Isengildina, Mississippi State University; Darren Hudson, Mississippi State University.*

Few farmers use hedging to market their crops despite theoretical models that suggest high optimal hedge ratios and significant risk management education efforts. This study provides an analysis of factors that motivate cotton farmers to select hedging as their primary

marketing strategy. The most important factors that explain the use of hedging by cotton producers were crop insurance, producer preferences, farm size and membership in marketing cooperatives. Income from government payments, off-farm income, and risk aversion also had an impact on the choice of the primary marketing strategy.

The Single Kernel Characterization System to Predict Flour Yield in Hard Red Winter Wheat. *Conrad Lyford, Oklahoma State University; Willis Kidd, Oklahoma State University; Charles Deyoe, C&L Technologies Inc.; Patricia Rayas-Duarte, Oklahoma State University.*

Flour yield is of central importance to millers because it provides to a large extent the value that millers receive from wheat. As such, being able to accurately and quickly predict flour yield can be important for wheat marketing and production decisions. Parameters provided by Single Kernel Characterizations System (SKCS 4100) along with test weight were regressed against flour yield for over 600 observations. This data was collected over a four-year period from across U.S. hard red winter wheat production areas. The regression equation had an R^2 of over 0.81. This suggests that the SKCS 4100 can be used to predict flour yield in hard red winter wheat.

Managing Price Risk in Cotton Production Using Strategic Rollover Hedging. *Steve Turner, University of Georgia; Vahe Heboyan, University of Georgia.*

Cotton was analyzed to evaluate the effectiveness of rollover hedging from 1982 to 1999. Simulated results report average returns of 62.22, 65.36, 75.80, 79.09, and 69.14 cents per pound for cash sale, single-year hedge, 5, 2.5, and 1% three-year strategic rollover hedging strategies, respectively.

Price Risk Management for Peanut Meal. *Ecio F. Costa, University of Georgia; Steven C. Turner, University of Georgia.*

Peanut meal is cross-hedged with soybean meal using peanut meal cash prices and soybean meal futures prices. Hedge ratios are obtained for short- vs. long-term data sets. Evaluation indicates positive gains for cross-hedged poultry/peanut producers, and that soybean meal futures can be used as a cross-hedging vehicle for peanut meal.

TITLE: Weather, Fire Ants, and Ethanol Issues.
(Moderator: David Anderson, Texas A&M University).

Estimating Climate, Technological, and Short-Term Weather Influences on Cotton and Wheat Yields. *Glenn Helmers, University of Nebraska; Saleem Shaik, Montana State University.*

The importance of climate (temperature and precipitation) on Wheat and Cotton yields is examined. The yield trends are estimated using temperature and precipitation levels for critical seasonal periods as well as a technological trend variable. Using this estimated yield procedure, "exogenous" events such as widespread disease, hail, etc. are removed from the comparison. The long-term 1900–1999 state time series data divided into two periods, 1900–50 and 1951–99, allows us to examine the short-term variation in climate variables on the wheat and cotton yield trends.

Contingent Valuation vs. Averting Cost Savings as Measures of South Carolina Households' Willingness to Pay for Red Imported Fire Ant Control. *Stephen Miller, Clemson University; Mark S. Henry, Clemson University; Brenda J. Vander Mey, Clemson University; Paul M. Horton, Clemson University.*

Estimates of South Carolina households' willingness to pay (WTP) for red imported fire ant control from the contingent valuation (CV) approach are compared to estimates of the lower bound of WTP from the averting cost savings (ACS) approach. The extent to which CV and ACS estimates "converge" increases

confidence in estimated WTP. Tobit models indicate that CV and ACS measures of WTP are affected by a common set of household characteristics.

Economic Impact of Red Imported Fire Ants to Texas Agriculture. *Dave Willis, Texas Tech University; Victoria Salin, Texas A&M University; Curtis Lard, Texas A&M University.*

A survey of 3612 Texas agricultural producers was conducted to estimate the economic damage Red Imported Fire Ants impose on agricultural producers. Statewide and regional damage estimates for crop losses, livestock losses, equipment repair and replacement, medical expenses, and control costs are derived. Agricultural damages annually exceed $90 million.

Perspectives Regarding Conversion of Agricultural Biomass to Ethanol. *Francis Epplin, Oklahoma State University; Gelson Tembo, Oklahoma State University; Raymond L. Huhnke, Oklahoma State University.*

While theoretically more efficient than starch-based ethanol systems, conversion of lignocellulosics to ethanol is not without major challenges. An integrated model that encompasses alternative feedstock, feedstock production, harvest, storage, transport, processing, by-products, and plant size could be used to identify constraints and reveal opportunities for reducing and prioritizing research.

TITLE: China
(Moderator: Abner Womack, Texas A&M University).

Forecasting Chinese Meat Trade. *Parr Rosson, Texas A&M University; Flynn Adcock, Texas A&M University; Yanhong Chen, Texas A&M University.*

China's net trade potential for beef, pork, poultry, and fish is forecast from 2000–2010. China's supply/demand balance for meats is analyzed using econometric techniques to es-

timate the underlying economic parameters. Net import volumes are forecast to have annual increases of 2.1 million metric tons (mmt) for poultry, 2.7 mmt for beef, and 3.6 mmt for fish. China is forecast to import 9.0 mmt of pork annually over the same period. Forecasts are contingent upon consistent government policy and economic stability.

Will China Be a Major Market for U.S. Pork Exports. *Xiang Dong Qin, North Carolina A&T State University; William Amponsah, North Carolina A&T State University.*

U.S. pork industry hails the success of the recently concluded U.S.-China Trade Agreement, hoping to expand its growing market share in the biggest pork market in the World. We elaborate on details of trade pact which are relevant to U.S. pork exports to China. Moreover, we conduct a quantitative analysis of the Chinese pork industry by means of a series of Dynamic grey models. The analytical results are used to illustrate the competitiveness of U.S. pork in the Chinese market.

The Outlook of China's Livestock Production and Consumption. *Xiang Dong Qin, North Carolina A&T State University; William Amponsah, North Carolina A&T State University.*

The analysis of China's livestock production and consumption is often hampered by the lack of credible data. We propose to compile a revised data based on more accurate household survey data. Furthermore, we utilize the derived data to analyze a partial equilibrium market-clearing model and to simulate the production and consumption in China's livestock sector for the near future. Our findings are aimed at helping draw implications for U.S. trade policy makers.

TITLE: Policy, Efficiency and Trade.
(Moderator: Stelios Katranidis, University of Macedonia).

Economic Integration Among Central American Countries: The Influence of Ag-

ricultural Policy. *P. Lynn Kennedy, Louisiana State University; Jorge Icabalceta, Louisiana State University.*

A game theoretic framework is used to identify Nash equilibrium solutions to several trade liberalization scenarios in Central America. To account for the influence of economic sectors on trade liberalization, the payoffs of the PPF are estimated using the MISS model. Countries choose partial liberalization rather than closer integration.

GMOs in International Agricultural Trade: A Recipe for Trouble or Double Trouble? *E. Ekanem, Tennessee State University; F. Tegegne, Tennessee State University; S. Singh, Tennessee State University; S. Muhammad, Tennessee State University.*

The introduction of Genetically Modified Organisms (GMOs) into the world's food system will have significant impacts on domestic and international trade. Using a qualitative discourse and published data, this paper examines factors that will influence the reception of GMOs and discusses a framework for analyzing related issues in agricultural trade.

The Economic Efficiency of Indonesian Rice Programs Trade. *Harjanto Djunaidi, University of Arkansas; Eric J. Wailes, University of Arkansas; Gail L. Cramer, University of Arkansas.*

Over the last three decades, the Indonesian Food Agency (BULOG) has been trying to increase rice production through various policy instruments such as input price subsidies, guaranteed producers' price, trade restrictions and low interest rate policies for bank credit as well as a ceiling rice price for consumers. Analyses showed that while Indonesia managed to increase rice production to meet the growing needs of the population, these food security and stabilization policies are expensive.

Technical Efficiency of Poultry Farms in Saudi Arabia. *Khalid Al-Rwis, Oklahoma State University; Francis M. Epplin, Oklahoma State University.*

The government of Saudi Arabia has made a substantial effort to develop broiler production. The objective of this research is to determine if poultry producers in the central region of Saudi Arabia are efficient. A survey of farms was conducted. Stochastic frontier production functions were estimated.

TITLE: Beef and Livestock Marketing.
(Moderator: Michael Popp, University of Arkansas).

Household Preferences Toward a Potential Fresh Ground Beef and Turkey Product. *Alvin Schupp, Louisiana State University; Carol O'Neil, Louisiana State University; Witton Prinyawiawatkul, Louisiana State University.*

Consumer concerns with fat and cholesterol have encouraged many consumers to seek alternatives to regular ground beef. Many have continued using beef by purchasing lower fat ground beef products or hamburger extended with vegetable protein product. Others have moved to lower fat ground poultry products. This study examines the willingness of consumers to purchase a mixed fresh ground beef and turkey (chicken) product. A mail survey of Louisiana households found approximately 16 percent had mixed the product in their home. The important variables in the multinomial logit analysis of the Yes vs No purchase decision where beef is one of the household's two most popular fresh meats, the household had consumed hamburger during the last month, and the respondent had previously mixed the two products in the home, are age, marital status, and race. Gender, children in the household, education, presence of a homemaker, and family income were unimportant in explaining the household's purchase decision for the new product.

Development and Use of a Stocker Cattle Market Workshop in Extension Ranch Management Programming. *Lawrence Fal-*

coner, Texas A&M University; John Parker, Texas A&M University.

This paper describes the development of a workshop designed to familiarize cow-calf producers with price risk management techniques built around the cash markets, forward cash contracts, and stocker cattle futures and options introduced by the Chicago Mercantile Exchange. Participants are introduced to concepts of how price targets can be set for their calves, how basis levels can be estimated, and how seasonal and cyclical price patterns may be used to the advantage of cow-calf producers.

Economic Benefit of Live Animal Carcass Ultrasound Technology. *Randall Little, Mississippi State University; Jayson Lusk, Mississippi State University; John Anderson, University of Kentucky; Allen R. Williams, Mississippi State University.*

Recent technological innovations are allowing cattle producers to more accurately predict slaughter carcass characteristics, such as quality and yield grades, before the animals are even placed on feed. By using ultrasound, cattle producers have the potential to strategically feed and market animals to enhance revenue. Although this technology exists, producers are in need of information regarding the potential benefits of ultrasound. This study estimates the returns of adopting ultrasound technology.

Consumer Demographics and Product Choice: Demand for Quality Differentiated Beef. *Jayson Lusk, Mississippi State University.*

This research illustrates an alternative method to determine the influence of consumer demographics on choice of quality differentiated beef products. Results indicate that consumer demographic have a strong influence on beef steak choice, suggesting that targeted marketing strategies are more likely to be effective than traditional generic marketing strategies.

TITLE: Teaching.
(Moderator: Ed Rister, Texas A&M University).

Effectiveness of Inductive and Deductive Teaching Methods in Learning Agricultural Economics: A Case Study. *Daniel S. Tilley, Oklahoma State University; Alix Dameus, Oklahoma State University.*

The effects of inductive and deductive teaching method, students' cognitive and affective characteristics and learning style on students' performance are measured. Performance is measured by the scores on tests based on trade concepts and exercises in the introductory course in agricultural economics. Results suggest that inductive teaching increases students' performance.

Factors Affecting School Choice and Financial Assistance Among Agricultural Economics Graduate Students. *M. Scott Daniel, Kansas State University; Darrell R. Mark, Kansas State University; Christine A. Wilson, Kansas State University; Jayson L. Lusk, Mississippi State University.*

TITLE: Miscellaneous Environmental Issues.
(Moderator: Lal Almas, Texas A&M University).

Mixed Integer Solution of Environmental Safety-First Problems. *Francis McCamley, University of Missouri-Columbia; Zeyuan Qiu, University of Missouri-Columbia; Tony Prato, University of Missouri-Columbia.*

We consider a mixed integer programming method of solving safety-first problems. This approach is applied to problems of controlling sedimentation and nitrogen concentration in runoff for Goodwater Creek watershed in Missouri. The mixed integer programming solutions give greater expected net returns than models based on partial moment inequality constraints.

Optimal Profits Under Environmental Con-

straints. *Walaiporn Intarapapong, Mississippi State University; Diane Hite, Mississippi State University.*

Total Daily Maximum Load Rules will soon become a reality. Nutrient runoff from fertilizer is suspected of being a major contributor to non-point pollution. Soybean rotations may be a viable alternative. Runoff is simulated using EPIC. An economic model is simulated with GAMs to calculate profits under environmental constraints.

A Test of Intraregional vs. Extraregional Benefit Transfer. *Walaiporn Intarapapong, Mississippi State University; Diane Hite, Mississippi State University; Abdul Jaafar, Mississippi State University.*

Benefits transfer provides a method to reduce the cost of estimating nonmarket values of natural resources. However, the validity and reliability of the benefit transfer method is questionable. We attempt to assess the impact of geographic proximity upon the bias and the reliability of predicted values from the benefit transfer approach.

Resource Management Under Production and Output Price Uncertainty: Implications for Environmental Policy. *Murat Isik, University of Illinois at Urbana–Champaign.*

This paper examines a risk-averse farmer's response to a change in the environmental and production related policies—*profit taxes, input taxes,* and *output taxes*—and their implications for designing and implementation of efficient environmental policies under both output price uncertainty and production uncertainty. It shows that the impact of market-based instruments on input use depends on the form of production uncertainty, risk-input relationships, structure of risk attitudes, and degrees of both output price uncertainty and production uncertainty. It indicates that it is important to consider various sources of uncertainties when examining the impacts of aforementioned policies on reducing input use.

TITLE: Miscellaneous Issues in Farm and Ranch Management.
(Moderator: Dean McCorkle, Texas A&M University).

Cost Analysis and Water Conservation Potential of Alternative Irrigation Systems. *Lal Almas, Texas Agricultural Experiment Station; Stephen H. Amosson, Texas A&M University; Fran E. Bretz, Texas Agricultural Experiment Station; Leon L. New, Texas Agricultural Extension Service; Thomas H. Marek, Texas Agricultural Experiment Station.*

Six irrigation systems are analyzed considering cost and potential water savings. The investment cost of the furrow and drip systems are \$26,450 and \$133,157, respectively. The cost of the quarter-mile pivot ranges from \$43,500 to \$49,772. The total pumping cost per acre-inch of water varies from \$5.91 to \$9.76.

Hedonic Profit Maximization of Irrigated Cotton Production Systems on the Texas High Plains. *Megan Denning, Texas Tech University; Octavio A. Ramirez, Texas Tech University; Carlos Carpio, Texas Tech University; Don Ethridge, Texas Tech University; Dean Ethridge, Texas Tech University.*

Production function models for cotton lint yield, seed yield, and lint quality characteristics are developed. The models are used to evaluate the effect of lint prices, seed prices, lint quality premiums/discounts, variable input costs, and weather conditions on a set of profit-maximizing crop management decisions. The main conclusion of the study is that consideration of the effect of management decisions on lint quality and improved weather forecasts can substantially increase expected returns and reduce profit variability.

Producer Acceptance of a New Peanut Marketing Cooperative: A Survey of Georgia Peanut Producers. *Sam Hancock, University of Georgia; Todd Ray, University of Georgia; Stanley M. Fletcher, University of*

Georgia; William Thomas, University of Georgia.

Consolidation in the first buyer market, increased imports, and political uncertainty have increased peanut producers' marketing risks. The objective of this research was to examine demographic differences in peanut producers' perceptions of new marketing institutions. Statistical tests revealed that size, irrigation practice, and location had significant effects on producers' perceptions.

Shadow Price Implications of Generalized Stochastic Dominance Efficiency. *Francis McCamley, University of Missouri-Columbia; Richard K. Rudel, University of Missouri.*

A simple linear model is presented which facilitates exploration of sets of shadow prices which are consistent with generalized stochastic dominance (GSD). This model is illustrated by applying it to two solutions of a problem by Anderson, Dillon, and Hardaker. Several characteristics of the GSD consistent sets are described.

TITLE: Risk Management.
(Moderator: Steven Klose, Texas A&M University).

Data Aggregation Issues in Crop Yield Risk Analysis: Using Cluster Analysis in Conjunction with GIS Techniques. *Michael Popp, University of Arkansas; Patrick Manning, University of Arkansas; Margot Rudstrom, University of Minnesota.*

Field level data is used to test for yield aggregation bias using cluster analysis. The information is used to provide some guidelines to data users on how to adjust aggregate data to more accurately reflect field level data for more objective measures of yield risk in farm decision modeling. Results suggest that aggregation will lead to distortions in risk measures which may be alleviated by reporting data at a higher level of detail or by performing sensitivity analyses.

Is Organic Cotton Production Just Too Risky? *Wesley Nimon, ERS/USDA; Keith Edmisten, North Carolina State University.*

Our model incorporates the institutional structure of the organic cotton certification process into an acreage response model. There is some reason to believe organic cotton yields may be more risky and our model indicates a subsidy of $50 per acre may be required to induce a substantial supply response.

An Assessment of the Profitability and Risk Management Potential of Variable Rate Seeding and Planting Date. *Carl Dillon, University of Kentucky; Tom Mueller, University of Kentucky; Scott Shearer, University of Kentucky.*

Profit maximizing and risk management potential of variable rate seeding and planting date is investigated. A combined mean-variance (E-V), integer programming model is used to study precision agriculture issues of spatially varying seeding rate and, through novel chemistry, planting date. Willingness to pay for the innovative seed technology is examined.

TITLE: Consumption.
(Moderator: Nathan Smith, University of Georgia).

International Evidence on Food Consumption Patterns. *Anita Regmi, ERS/USDA; James Seale Jr., University of Florida; Jason Bernstein, ERS/USDA.*

A two-stage, cross-country demand system is fit to the 1996 International Comparison Project (ICP) data. The first-stage estimates of the demand for aggregate consumption categories are compared to an earlier 1980 ICP data analysis. Conditional on aggregate food expenditure, the second stage estimates the demand for individual food sub-categories.

Consumer Preferences for Peanut Products in Haiti. *Robert Nelson, Auburn University; Curtis Jolly, Auburn University; Margaret*

Hinds, Oklahoma State University; Yanick Donis, Centre de Recherche et Documentation Agricol, Haiti; Emmanuel Prophete, Centre de Recherche et Documentation Agricol, Haiti.

Haitian consumers were surveyed to determine their preferences for three attributes of peanuts and peanut butter: form (dry- or honey roasted peanuts; spicy, sweet or plain peanut butter), origin (Haiti, US); and price. Conjoint analysis was used to calculate relative importance and strengths of preferences for these attributes.

Projected Economic Impacts of the New Partnership Agreement Between the EU and ACP States on the Senegalese Groundnut Sector. *Jason Bergtold, VA Polytechnic Inst. & State University; George Norton, VA Polytechnic Inst. & State University; Charlene Brewster, VA Polytechnic Inst. & State University.*

This paper examines the projected economic impacts on the Senegalese groundnut sector of two pertinent trade options open to Senegal under the recently signed Cotonou Convention: a regional economic partnership agreement (REPA) or an enhanced Generalized System of Preferences. Either of these options may have significant impacts, but the REPA option appears to be the most favorable for Senegal.

Food Security and Financial Crises in Developing Countries. *Chris D. Gingrich, Eastern Mennonite University; Carmen D. Horst, Eastern Mennonite University; Christopher A. Onyango, Eastern Mennonite University.*

Foreign exchange supplies are found to affect food consumption stability in Mexico and East Asia. The results suggest that significant decreases in food security could occur during financial crises. However, the actual impact of the Mexican and Asian crises on food security was less than predicted due to offsetting effects.

TITLE: Transportation, Storage and Trade.
(Moderator: Kim Zeuli, University of Kentucky).

U.S.–EU Banana War: Implications of Retaliatory Tariffs on Pecorino Cheese. *Vahe Heboyan, University of Georgia; Glenn C.W. Ames, University of Georgia; James E. Epperson, University of Georgia.*

This paper illustrates the economic impact of the U.S. countervailing trade policy because of the European Union's failure to adhere to the dispute panel findings of the World Trade Organization (WTO) in the banana dispute. The United States subsequently imposed prohibitive tariffs (100% ad valorem) on imports of selected EU products as countervailing policy. The estimated loss in consumer surplus for Pecorino cheese was $4.96 million per year as a result of the U.S. retaliatory trade policy. Tariff revenue and deadweight losses were $1.86 and $3.10 million, respectively. Italian producers are expected to lose $8.55 million in revenue due to reduced exports to the United States. Thus, the estimated welfare loss for Italian producers is nearly twice that for U.S. consumers.

Econometric Analysis of the U.S. Oranges Export Demand. *Gary Adams, FAPRI, University of Missouri; Boubaker Ben-Belhaseen, FAPRI, University of Missouri; Seth Meyer, FAPRI, University of Missouri; Patrick Westhoff, FAPRI, University of Missouri.*

Export demand elasticities are estimated for the three largest markets for U.S. fresh oranges. Price elasticities range from -1.02 in Japan to -2.82 in Hong Kong. Japanese orange production is found to be an imperfect substitute for U.S. exports. Estimated parameters imply surprising income and exchange rate effects.

Poultry Litter Transport Alternatives for Land Application in Virginia. *James Pease, Virginia Tech; David Kenyon, Virginia Tech; Beth Ann Pelletier, Virginia Tech.*

Concentrated production creates large amounts of nutrient-rich poultry litter waste products. Economic analysis of crop, hay, and pasture nutrient requirements, litter supply, and transportation costs indicate the economic potential of substituting poultry litter nutrients for a portion of enterprise nutrient inputs. Potential nutrient cost savings for litter users exceed $6 million with economically efficient distribution. Significant problems in expanding land applications throughout the feasible region include low adoption rates and inadequate transport and handling infrastructure. A combination of education, subsidies, brokerage industry entrepreneurship, and organized litter exchange programs could stimulate wider use of surplus litter.

A General Framework for Grain Blending and Segregation. *Eswar Sivaraman, Oklahoma State University; B. Wade Brorsen, Oklahoma State University; Conrad P. Lyford, Oklahoma State University.*

This paper extends the Hennessey and Wahl model of optimal grain blending and segregation (GBS) to the case where it is not possible to separate components within a load. The mathematical model shows that the convexity/concavity of the objective function or price schedule has important implications for GBS decisions. The model is then used with data on protein premium and content. Most of the value from GBS can be achieved with only two bins.

TITLE: Pricing Issues
(Moderator: Larry Falconer, Texas A&M University).

Intertemporal Consistency of Transaction Price Determinants in an Experimental Market for Fed Cattle. *Jared Carlberg, Oklahoma State University; Clement E. Ward, Oklahoma State University.*

The Fed Cattle Market Simulator is an experimental market for fed cattle. Four teams act as beef packing firms, eight as feedlots, and the teams interact to trade paper pens of cattle. Reliability of results is a major question with experimental markets. This paper tests for intertemporal consistency and compares results with previous research.

Seasonality of Class I Price Differentials Estimates for the Southeastern United States. *Carlos E. Testuri, University of Florida; Richard Kilmer, University of Florida; Thomas Spreen, University of Florida.*

This study provides insight into the seasonality of Class I price differentials in the southeastern dairy industry. This is accomplished through the dual solution of a generalized capacitated minimum cost network flow model of the dairy industry. The lowest and highest Class I price differentials occur in April and September.

New Evidence of Price Relationships in the U.S. Broiler Industry. *Harjanto Djunaidi, University of Arkansas; H.L. Goodwin, University of Arkansas.*

The predominance of contract production and finished product marketing contracts makes the broiler industry unique among other agricultural industries; as such, whole broiler wholesale price is in reality determining wholesale prices received by the various retail broiler cuts.

Time Series Properties of Asymmetric Price Transmission Models. *Hector Zapata, Louisiana State University; Wayne M. Gauthier, Louisiana State University; Phillip Garcia, University of Illinois.*

A test of symmetry in price transmission models is studied via Monte Carlo and empirical data. Classical applications with irreversible functions may lead to asymmetry findings even in its absence. The problem may lie in the considerable linear association introduced by segmentation procedures. The finding is robust to unit-root behavior.

TITLE: Operations Issues in Agribusiness.

(Moderator: Ed Smith, Texas A&M University).

Economic-Engineering Cost Analysis of a Cotton Gin Trash Extrusion Plant. *Marty Middleton, Texas Tech University; Emmett Elam, Texas Tech University.*

Extrusion processing can be used on cotton gin trash (CGT) to produce livestock feed (roughage) products. Using the economic-engineering approach, preliminary estimates of unit processing cost for CGT feed products were developed. Preliminary estimates suggest economies of size, with total processing costs as low as $9/ton.

Operational Changes and Management Issues for Oklahoma Meat Processors. *Rodney Holcomb, Oklahoma State University; Clement E. Ward, Oklahoma State University.*

The U.S. meat processing industry has seen several changes in the past decade: increased concentration among packers, advancements in ready-to-eat products and the technology used to provide those products, and stricter regulatory compliance (e.g. HACCP). Like most southern states, Oklahoma has several small meat processors that have gone through considerable operational and management changes to maintain their viability in the industry. A recent study examined the economic characteristics of Oklahoma's meat processors and compared the findings to those from a nearly identical study in 1983. Results suggest opportunities for applied research and extension programs for this area of agribusiness.

Empirical Investigation of Factors Determining Revenues of Landscape Maintenance and Lawn Care Firms in the Southeast. *Wojciech Florkowski, University of Georgia; Anil Kumar, University of Georgia; J.E. Epperson, University of Georgia; G.W. Landry, University of Georgia.*

Survey data are applied to identify factors influencing gross and net partial profits in landscape maintenance and lawn care in Georgia. Both measures increase in response to increasing labor expenses, years in operation, revenue from commercial accounts, and location in metro area, but supervisor's education also increases net partial profits.

An Evaluation of the Impact of ISO 9000 Standards on Registered U.S. Agribusiness Facilities. *Albert Allen, Mississippi State University; Gerald Mumma, Centers for Disease Control; Warren Couvillion, Mississippi State University.*

Ten selected reasons given for seeking registration to ISO 9000 standards were ranked and analyzed. Perceived marketability and internal operational efficiency due to adoption of ISO 9000 standards by U.S. ISO 9000 registered agribusinesses was estimated. The results show that quality assurance and system management goals of the standards were achieved.

TITLE: Demographic Issues in Community Development.
(Moderator: Judy Stallman, Texas A&M University).

Population Density and the Cost of Local Services. *Daniel Rainey, University of Arkansas.*

Data from 1990 is used to examine the impact of changes in population density on the cost of providing local public services. The study finds that over 70 percent of cities face economies of scale in providing local services in the aggregate by increasing their production density. However, specific individual services (police, highways, sanitation, and fire) were not evident. Therefore, when local officials are making plans for economic growth they must carefully weigh what impact that growth is going to have on its ability to provide each service.

Black Farmers Transition from Tobacco. *Nolita Orr, University of Kentucky; Kim Zeuli, University of Kentucky.*

This paper represents results from interviews with 15 black tobacco farmers in Kentucky. This information should provide insight into how the government, the extension service, and universities can assist black tobacco farmers in their attempts to diversify and adapt their operations to fit a changing agricultural environment.

A Survey Analysis of the Role of Institutions of Higher Education in Employee Recruitment in West Virginia. *Tesfa G. Gebremedhin, West Virginia University; Brian Lego, West Virginia University; Kerry Odell, West Virginia University.*

Logit and ordered probit will be the primary types of econometric models to be used to examine the importance of West Virginia's higher education institutions as a source of skilled employees for the state's private sector. The study is expected to confirm that the descriptive analysis and expected empirical results will have numerous useful applications in decision making and policy programs.

Analysis of Regional Disparities and Income Convergence in West Virginia. *James Bukenya, West Virginia University; Tesf Gebremedhin, West Virginia University; Peter Schaeffer, West Virginia University.*

This paper employs three concepts of per-capita income—*personal income, personal disposable income and personal income minus government transfers*—to test the convergence hypothesis across the 55 West Virginia counties. The findings show evidence of both α- and β-convergence, the estimated speed of convergence is around 2 percent per year.

TITLE: Regional Environmental Issues.
(Moderator: David Anderson, Texas A&M University).

Appalachian Agriculture: Regional Changes and Implications. *Dale Colyer, West Virginia University.*

Agriculture in the Appalachian region has

progressed since the ARC was established in 1965 when it was characterized by persistent poverty. Despite a comparable growth rate by the sector, Appalachian agriculture remains relatively small compared to that of the United States with an average farm size of 152 compared with 487 acres. The area is also much more dependent on animal agriculture with niche crops and products including aquaculture becoming more important sources of income. While industrial research, including GMOs, is increasingly important for U.S. agriculture, Appalachia will continue to depend more on the public sector.

Maximum Environmental Shock: Supply and Demand Response for Georgia Peaches. *Irfan Tareen, University of Georgia; Timothy A. Park, University of Georgia; Michael E. Wetzstein, University of Georgia.*

The concept of a maximum environmental shock (MES) is introduced for the Georgia peach industry. For determining MES, demand and supply elasticities were estimated for Georgia peaches. Results indicate Georgia peach producers can potentially withstand a 22% loss in yield before they experience a loss in net revenue.

TITLE: Precision Farming.
(Moderator: Greg Ibendahl, University of Kentucky).

Precision Agriculture: A Breakeven Acreage Analysis. *Jean-Marc Gandonou, University of Kentucky; Carl R. Dillon, University of Kentucky; Steve Isaacs, University of Kentucky; Scott Shearer, University of Kentucky.*

Before engaging in precision agriculture (PA) it becomes important to determine the least-cost strategy. A key decision to make is whether to buy or custom hire the equipment. Using marginal analysis, the study determines the breakeven acreage necessary to economically justify the purchase of PA equipment versus custom hire.

Economic Impacts of Precision Farming in

Irrigated Cotton Production. *Man Yu, Texas Tech University; Eduardo Segarra, Texas Tech University.*

Spatial optimal nitrogen fertilizer application levels and net revenues in irrigated cotton production were derived. Results indicate that precision farming can improve the profitability, and potentially reduce the environmental damages associated with nitrogen fertilizer use in irrigated cotton production.

The Economics of Precision Farming in Grain Sorghum. *Susan Watson, Texas Tech University; Eduardo Segarra, Texas Tech University; Eddie Bynum, Jr., Texas Agricultural Extension Service; Stephen Machato, Texas Agricultural Extension Service; Thomas Archer, Texas Agricultural Extension Service; L. Ted Wilson, Texas Agricultural Experiment Station.*

This study evaluates the profitability of whole-field and precision farming in grain sorghum production. Optimal levels of nitrogen fertilizer, pesticide for greenbug control, and irrigation water for both farming approaches are derived. The results indicate that precision farming would be more profitable than whole-field farming in all scenarios analyzed.

Precision Farming Technology Adoption in Tennessee Counties: A Logit Analysis. *Burton C. English, University of Tennessee; James A. Larson, University of Tennessee; Roland Roberts, University of Tennessee.*

Data from a survey of extension agents and the Census of Agriculture were used to develop logit regression models to estimate the probabilities of farmers adopting four precision farming technologies in Tennessee counties. Agribusiness firms could use the estimated probabilities to identify favorable counties for adoption of precision farming services.

TITLE: Macro & Exchange.
(Moderator: Parr Rosson, Texas A&M University).

Brazil's New Floating Exchange Rate Regime and Competitiveness in the World Broiler Market. *Ecio F. Costa, University of Georgia; Glenn C.W. Ames, University of Georgia; Lewell Gunter, University of Georgia.*

In 1999, Brazil devalued its currency, increasing its competitiveness in the poultry industry and capturing world market share. This paper discusses the effects on Brazil's trade, evaluates preliminary statistics on the impacts of the devaluation, and reports the results from a computable general equilibrium simulation of the devaluation.

Monetary Impacts and Overshooting Agricultural Prices: The Case of the Southeast Asian Countries. *Michael Reed, University of Kentucky; Mohamad F. Hasan, University of Kentucky; Sayed H. Saghaian, University of Kentucky.*

A number of empirical studies have been conducted to investigate the relationship between monetary policy and agricultural prices in USA, Canada, and New Zealand. This study investigates the effects of monetary policy on agricultural prices in Southeast Asian countries (Malaysia, Indonesia, Thailand, Philippines, and South Korea), where there are differing structures with respect to agricultural and financial sectors. The model uses neoclassical macroeconomic theory and time series econometric methods to investigate whether commodity prices overshoot their long-run equilibrium. Preliminary results show that there exists a long-run equilibrium relationship between money supply and agricultural prices for each country except Indonesia. These results indicate that monetary policy has significant short- and long-run effects on agricultural prices in Southeast Asian countries.

Macroeconomic Monetary Impacts on Prices of Internationally Traded Agricultural Commodities. *Michael Reed, University of Kentucky; Sayed Saghaian, University of Kentucky; Mary Marchant, University of Kentucky.*

This paper addresses the short-run overshooting of agricultural prices in an "open" economy. The contributions of this paper are twofold. First, this research expands the theoretical specification of the overshooting hypothesis by relaxing the closed economy assumption of Frankel's (1986) model to allow international trade. Second, this research adds to the body of empirical literature by employing contemporary nonstationary time series econometric methods to test maintained hypothesis in the theoretical model. Specifically, Johansen's cointegration test is used along with a vector error correction model to investigate whether agricultural prices overshoot in the short run in an "open" economy. The results lend further support to policies that decrease instability of farm incomes.

Impacts of International Trade Policy Changes on Farmers in South Carolina.
Minsup Shim, South Carolina State University; David Karemera, South Carolina State University.

This research uses the Food and Agricultural Policy Research Institute Model and the South Carolina Representative Farm Model to evaluate the impacts of international trade policy changes at the farm level in South Carolina. Focus is given to changes in net farm incomes, land prices, cash rents, and debt-to-asset ratios for representative South Carolina vegetable and fruit farms. Data collected by the South Carolina Farm Management Association and former survey data are employed in this study. The farms studied are segregated into three distinct agricultural regions—the Upper lands, the Midlands, and the Coastal areas—and also into three different farm sizes: small-sized, medium-sized, and large-sized farms. It is expected that large- and medium-sized farms could survive under the international free trade agreements while small-sized farms might not have the financial flexibility to survive.

TITLE: Domestic Farm Policy.
(Moderator: Joe Outlaw, Texas A&M University).

Comparison of Alternative Safety Net Programs for the 2000 Farm Bill.
Keith Schumann, Texas A&M University; James Richardson, Texas A&M University; Paul A. Feldman, Texas A&M University; Edward G. Smith, Texas A&M University.

This paper attempted to compare farm level impacts of proposed safety net programs for the 2000 Farm Bill on selected Representative Panel Farms maintained by the Agricultural and Food Policy Center. The Farm Level Income and Policy Simulation Model was used to simulate farm activities under the differing provisions.

Landlord Satisfaction with Arkansas Agricultural Land Leases.
Ronald Rainey, University of Arkansas; Bruce L. Dixon, University of Arkansas; Lucas D. Parsch, University of Arkansas; Bruce L. Ahrendsen, University of Arkansas; Ralph Bierlen, Packers and Stockers Admn., USDA.

A 1998 sample of 310 Arkansas landowners is used to examine landlord satisfaction levels with agricultural land-leasing agreements. Ordered probit models are estimated for two sub-samples: pure landlords and farm operators who are also landlords. Results suggest that landlord managerial involvement plays a significant role in lease satisfaction levels.

Evaluating Crop and Revenue Insurance Products for Texas Cotton Producers.
James E. Field, First Ag. Credit, FCS; Sukant Misra, Texas Tech University; Octavio Ramirez, Texas Tech University.

An empirical procedure was developed to analyze the cost effectiveness of alternative crop insurance products in terms of increasing producer net returns and minimizing variation in net returns. Results indicate that CAT was the overwhelmingly preferred MPCI option for all scenarios. The ranking of the other MPCI options was consistently 50/100, 60/100, and 75/100 in all scenarios. The CRC

options, with the exception of one scenario, ranked 50, 60, and 75 percent, respectively.

Have Land Use Changes Increased in Western Oklahoma as a Result of Freedom to Farm? *J. Mark Leonard, Oklahoma State University; Mike Dicks, Oklahoma State University.*

Farm Service Agency acreage data for three Oklahoma wheat producing counties is analyzed to determine the degree of price response in acreage allocation decisions. Some critics have stated that land use after Freedom to Farm would change little; however these findings show acreage shifted greatly after the policy.

TITLE: Livestock Management Issues.
(Moderator: Dean McCorkle, Texas A&M University).

The Consideration of Feed Ingredient Price and Nutrient Composition Risk in the Formulation of Optimal Feed Rations for Beef Cattle. *Brian Coffey, University of Kentucky; Carl R. Dillon, University of Kentucky; John D. Anderson, University of Kentucky.*

The traditional minimum cost feed ration linear programming model is expanded to address feed ingredient price risk in a mean-variance (E-V) framework and nutrient variability with a Wicks-Guise application. Rations are optimal subject to aversion to price and nutrient variability and should provide a basis for risk management decision-making tools.

Estimation of the Value of Old World Bluestem and Optimum Grazing Season Under Alternative Stocking Rates. *Arden Colette, West Texas A&M University; Lal K. Almas, Texas Agricultural Experiment Station; Terry Ervin, Texas Tech University.*

The production potential of OWB forage is evaluated under commercial rotational grazing management. The economic value of the forage is determined by the replacement value of the CP and TDN content. The optimal grazing period is determined where the MVP of grazing an additional day is equal to the MFC.

How Does Cottonseed Meal Compare as an Alternative Protein Source to Soybean Meal in Poultry Production? *Ecio F. Costa, University of Georgia; Jack E. Houston, University of Georgia; Gene M. Pesti, University of Georgia.*

Profitability of substituting cottonseed meal (CSM) for soybean meal (SBM) in broiler feed is evaluated using a model that optimizes broiler production under changing market conditions. While CSM-fed broilers may earn higher profits for whole carcass, SBM-fed broilers are generally more profitable. Optimal protein levels exceed currently recommended levels.

TITLE: Farm Enterprise Management.
(Moderator: Lal Almas, Texas A&M University).

Technology Adoption in US Hog Production Management. *Jeffrey Gillespie, Louisiana State University; Christopher Davis, Louisiana State University.*

The adoptions of each of ten major technological innovations used in U.S. hog production are analyzed using logit analysis. Variables found to be significantly related with technology adoption include production region, farm size, farm diversity, employment of the operator, labor characteristics, contracting, debt load, sex, age, education, and risk preference.

Economic Value of High Density Orange Tree Plantings in Southwest Florida. *Fritz Roka, University of Florida; Ronald P. Muraro, University of Florida; Thomas H. Spreen, University of Florida.*

Along with the variety and rootstock selections, tree density is an important planting decision for a citrus grower. Building on cross-sectional and time series data collected from southwest Florida citrus growers, this paper

examines the production and cost trade offs among a range of tree density planting decisions and estimates the net returns from managing selected tree densities.

The Farm Level Impact of Phosphorous Reducing Technologies in Swine Manure. *Raymond Massey, University of Missouri; John A. Lory, University of Missouri; Joseph Zulovich, University of Missouri.*

Phosphorus reducing feeding strategies are being considered by farmers and regulatory agencies as a method of reducing negative environmental consequences of land applied manure. Reducing phosphorus excreted has little or no impact on producers storing manure in lagoons and land applying to meet the nitrogen use of the crop. Reducing phosphorus will reduce the acres required for land application of pit stored manure but will have little impact on time required for application and has mixed impact on the total cost of application less the value of the nutrients in the manure.

Estimated Economic Impacts of the Invasive Plant *Sericea lespedeza* on Kansas Grazing Land. *Rodney Jones, Kansas State University; Richard Fechter, Kansas State University.*

Sericea lespedeza is a long-lived legume plant that is unique in that it is a listed forage crop in the Southeastern United States, but is listed as a noxious weed in other areas, specifically Kansas. Cattle, the predominant grazing species in Kansas, will not consume *sericea lespedeza* as a standing forage, and it spreads rapidly in native grass pastures. Control is expensive; however, without control, the plant threatens to become the dominant plant species in certain areas of Kansas. This study develops a model to examine the economic impacts associated with various strategies for controlling sericea in the Kansas Flint Hills.

TITLE: Miscellaneous Domestic and International Policy Considerations.
(Moderator: Joe Outlaw, Texas A&M University).

Comparison of the Corn Production Cost Determinants for Southern Producers. *Linda F. Foreman, ERS-USDA.*

Cost control is a principal factor determining farm success. This study examines factors that influence the variation in U.S. farmers' corn production cost per bushel and compares the Southeast producers' cost with those in other regions after controlling for other determinants of production cost.

Producer Experience and Yield Performance. *Kim Zeuli, University of Kentucky; Barry Goodwin, North Carolina State University; Allen Featherstone, Kansas State University.*

Current crop insurance rating procedures consider only yield performance for the individual crop in question. Producers with incomplete yield histories are penalized with lower coverage levels and higher premiums. We examine the implications of using alternative crop production histories for premiums by evaluating the correlation of yield performance across crops.

The Economic Effects of EU Wheat Policies in Greece: A Welfare Analysis of Horizontally Linked Markets. *David S. Bullock, University of Illinois at Urbana–Champaign; Stelios D. Katranidis, University of Macedonia; Elisavet I. Nitsi, University of Illinois at Urbana–Champaign.*

This paper examines the welfare effects of the Common Agricultural Policy (CAP) soft and durum wheat regime practiced in Greece after its 1981 entry into the European Union. Since Greek farmers produce these products on the same land in different years, we model the soft and durum wheat markets as horizontally linked. We use bootstrap techniques to conduct a statistical analysis of the estimated producer welfare effects of Greek wheat policy. The welfare analysis indicates that the income transfers to Greek wheat farmers rose between 1986 and 1992. The 1992 CAP reform interrupted this upward trend, and trans-

fers have remained statistically constant since 1992.

The Effects of US Land Retirement Policies on World Land Use. *Michael Dicks, Oklahoma State University.*

Traditional wisdom in the agricultural community is that supply management in the United States does not work because as the United States reduces acreage the rest of the world expands acreage, negating any increase in price that may have occurred as a result of reduced acreage. However, this study has found that the rest of the world has not responded to our declining acreage. Other countries' planting decisions have been independent of the U.S. farmland retirement policies.

TITLE: Quantitative Methods in Agricultural Economics.
(Moderator: Steven Klose, Texas A&M University).

A Dynamic Structural Time Series Model of the U.S. Rough Rice Market. *Sung Chul No, Louisiana State University; Hector O. Zapata, Louisiana State University.*

This study constructs a structural time series model of the US rice market and derives a transfer function to forecast US rough rice prices. The transfer function of US rough rice prices, derived from a structural econometric model for the US rice market, can improve forecasting accuracy.

A Censored System Estimation of Hispanic Household Food Consumption Patterns. *Bruno A. Lanfranco, University of Georgia; Glenn C.W. Ames, University of Georgia; Chung L. Huang, University of Georgia.*

A system of nine censored Engel curve equations was estimated for Hispanic households in the U.S.: grains, fruits, milk, meat, legumes, fats, sugar, and beverages. Income and household size elasticities, with their respective confidence intervals, are reported and

the results compared with other ethnic groups in the U.S.

Identifying the Contributions of Language-Based Methodologies in the Minimization of Value Conflicts Within American Agriculture. *Wayne Gauthier, Louisiana State University.*

Values were identified as satisfiers of market needs. Both needs and satisfiers evolve with the evolution of humans Language-based methodologies suggest alternative and complementary approaches for identifying abstract values that market exchange rules may be causing to be in conflict, resulting in a diminished quality of life.

TITLE: Miscellaneous Issues in Agribusiness.

Nutraceutical Dairy Products: Willingness-to-Pay and Challenges of Commercialization. *Leigh Maynard, University of Kentucky; Ibrahim Bamba, University of Kentucky; Sharon T. Franklin, University of Kentucky.*

A taste test and willingness-to-pay survey assessed commercial potential for dairy products with high levels of CLA, a cancer-fighting substance. The results suggested that professional manufacturers could produce palatable high-CLA dairy products, and that the average willingness-to-pay exceeds expected marginal production costs.

The Structure of the Processed Orange Industry in Florida and Sao Paulo, Brazil. *Waldir Fernandez, University of Florida; Thomas H. Spreen, University of Florida.*

The orange processing industries in Florida and Sao Paulo, Brazil collectively represent over 80 percent of world orange juice production. Although these two industries produce a similar product, their structures are different. In this paper, such divergences are highlighted and the New Institutional Economics is used to explain them.

Structural Change in the Boneless Skinless Breast Chicken Market: How Will It Affect the Price Relationship Studies in the U.S. Broiler Industry? *Harjanto Djunaidi, University of Arkansas; H.L. Goodwin, University of Arkansas; Andrew McKenzie, University of Kentucky.*

Production and marketing contracts are becoming increasingly common in the broiler industry. This suggests that a traditional approach toward price relationship studies might not fit recent market developments, especially when possible structural changes are ignored. This study showed that boneless skinless chicken breast price significantly affects price received by processors for whole broilers and that a long-run equilibrium relationship exists.

Measuring the Impacts of Grid Pricing on Packer Performance on the Pork Industry. *Michael Poray, Purdue University.*

Traditional organization in the hog production/packing system is being challenged as never before. The use of weight/leanness premium and discount (P&D) schedules is now pervasive in live hog pricing. In most cases, however, the P&D schedules are changed infrequently—biannually or quarterly. With packed pork markets changing daily, it is likely that live hog prices may not reflect the value of packed pork products consistently. This research analyzes the impacts associated with P&D pricing grid schedules on the performance of hog packing operations when P&D schedules are changed on a more frequent basis.

TITLE: Environmental Issues and Property Values.
(Moderator: David Anderson, Texas A&M University).

An Assessment of the Value of Florida's Public Freshwater and Saltwater Piers and Boat Ramps. *Easton Chambers, Florida A&M State University; Michael Thomas, Florida A&M University.*

As a policy analytic, a random-utility travel cost model is used to estimate the value of public boat-ramps in Florida. The model estimates participation rates and equivalent variation for changes in boat-ramp availability using dummy variables for location, population.

An Analysis of Structural Differences in the Rural Real Estate Market. *Patricia Soto, Louisiana State University; Enid Cuellar, Louisiana State University; Huizhen Niu, Louisiana State University; Lonnie R. Vandeveer, Louisiana State University.*

Modeling of a rural land market in the presence of adjacent urban areas may result in structural differences in empirical model parameters. In addition, biased and inefficient estimates may occur if spatial autocorrelation exists within the data. This research uses spatial econometric procedures to test for structural stability and spatial autocorrelation. Spatial econometric techniques are then used to estimate a rural land value model in southwest Louisiana. Results generally indicate structural differences in the rural real estate market and spatial econometric procedures provide improved estimates over ordinary least squares estimation procedures.

Valuation of Kansas Agricultural Wetlands: Risk and Stochastic Considerations. *Brett Gelso, Kansas State University; Dale Levering, Kansas State University; Abdullahi Abdulkadri, Center for Disease Control and Prevention.*

The purpose of this study is to identify the value of permanent and seasonal wetlands to Kansas Agricultural producers. The analysis was based on survey data collected from Kansas Management Association members.

The research used financial tools in a natural resource model to quantify how differences in wetland characteristics influence Willingness-To-Pay (WTP). A Mean-Variance portfolio model was used to identify how dispersion of wetland, in relation to other productive farm assets, affects a producer's expected returns. The model also identifies how

the size of wetland acres influences risk, as well as how risk tolerance impacts wetland valuations.

Parks and Property Values in Greenville, South Carolina. *Molly Espey, Clemson University; Kwami Owusu-Edusei, Clemson University.*

The effect of proximity to different types of parks on housing prices is estimated using a unique data set of single family homes sold between 1990 and 1999 in Greenville, South Carolina. This value is found to generally be positive but to vary with respect to park size and amenities.

TITLE: Technology Assessment.
(Moderator: Mary Marchant, University of Kentucky).

Forecasting the Adoption of Genetically-Engineered Crops in the USA. *Jorge Fernandez-Cornejo, USDA; Rachael Goddhue, University of California–Davis; Corinne Alexander, University of California–Davis.*

Unlike many innovations, controversy over the use of genetically engineered crops may have induced farmers to disadopt these technologies, making a traditional static diffusion model particularly inappropriate. Here we develop and estimate a dynamic diffusion model, using nationwide farm-level surveys. Using this analysis we examine the diffusion paths of genetically engineered corn, soybeans, and cotton; forecast the adoption of those crops over the next two years; and explore the main determinants of the rate of diffusion.

A Farm-Level Analysis of Special Purpose Crop Production. *Daniel Green, University of Kentucky; Kimberly A. Zeuli, University of Kentucky; Greg Ibendahl, University of Kentucky.*

Special purpose crops are those with traits designed to meet the specific demands of an end user. A mean-variance (E-V) mathematical programming model and sensitivity analysis are used to quantify and discuss the potential net returns and risk associated with the adoption of special purpose crops at the farm level.

Implications of Rice Biotechnology on Optimal Rice Crop Rotation in the Mississippi River Delta Region. *Mamane Annou, University of Arkansas; James H. Hansen, University of Arkansas; Eric J. Wailes, University of Arkansas; Gail L. Cramer, University of Arkansas.*

Availability of new herbicide-resistant biotech rice varieties may affect traditional rice rotation practices to control red rice and enhance yields. This research evaluates the adoption of biotech rice and its effects on the current practice of crop rotation in the Mississippi River Delta region. The optimal utilization of biotech rice in crop rotation is analyzed using a nonlinear mathematical programming model with mixed integers. Optimal rotation was found to be sensitive to the technology fee, relative prices received by producers, the effectiveness of red rice control, and a sheath blight penalty on yield for continuous rice production.

Economic and Environmental Impacts of Round-Up Ready Technology: A Case Study of Mississippi Soybean Producers. *Fatimah Kari, Mississippi State University; Walaiporn Intarapapong, Mississippi State University; Somporn Meerungruang, Mississippi State University.*

The translog cost estimates and EPIC (Erosion/Productivity Impact Calculator) procedure will be used to assess the profitability and environmental benefit in using Roundup Ready (RR) technology. A preliminary result from the translog cost function indicates that there are economic benefits to using this biotechnological innovation. The economic benefit section also discusses the magnitude and degree of substitutability and complementary relationship between the factors of production. The combined results acknowledging environmental implications will be reported.